Conclusions: Cross-reactive memory humoral immune responses appear to be beneficial in symptomatic secondary D3V infection, but not in secondary D2V or D1V infection. These results may have important implications for the development of live attenuated tetravalent dengue vaccines.

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THE RELATIONSHIP OF PREEXISTING DENGUE VIRUS NEUTRALIZING ANTIBODY LEVELS TO VIREMIA AND DISEASE SEVERITY IN SECONDARY DENGUE INFECTIONS

Gibbons RV, Endy TP, Nisalak A, Chunsutthiwat S, Vaughn DW, Green S, Ennis FA, Rothman A and Libraty DH

Neutralizing antibody is a common marker of protective immunity for most of the existing vaccines and has been the surrogate marker for protection in the development of an effective tetravalent dengue vaccine. The host's humoral immune response following natural dengue virus infection results in a diverse antibody response, including a variety of combinations of protective and non-protective, neutralizing and non-neutralizing, and heterotypic and serotype-specific antibodies.

Antibodies can be protective in dengue virus infection. In this presentation we will discuss the recently published results from a prospective cohort in Thailand (Endy TP, et al. JID 189: 990-1000;2004) showing that in secondary DEN3 infection levels of neutralizing anti-body against DEN3 were associated with lower viremia and milder disease. However, in secondary DEN2 infection levels of neutralizing antibody against DEN2 were not associated with the severity of secondary DEN2 infection; and that levels of neutralizing antibody against the infecting virus isolates were not associated with viremia levels in secondary DEN1 or DEN2 infections.

This data suggests that cross-reactive humoral immune responses are beneficial in symptomatic secondary DEN3, but not secondary DEN2 or DEN1 infection. Implications for vaccine development will be discussed.

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